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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,824	04/21/2000	Hiroyuki Ogawa	SUD-115-USAP	6405

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EXAMINER

KIM, CHONG R

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/556,824

Applicant(s)

OGAWA, HIROYUKI

Examiner

Charles Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on April 21, 1999. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Claim Objections

1. Claim 6 is objected to because of the following informalities: The limitations (b) and (c) in lines 7-14 of claim 6 do not further limit the subject matter of the previous claim 3. The Examiner suggests removing the limitations (b) and (c) from claim 6.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Horiuchi (U.S. Patent No. 6,317,511).

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Referring to claim 1, Horiuchi discloses a method for observing an object by projection, comprising the steps of:

- a. illuminating the object under observation with a coherent laser beam (col. 11, lines 24-34)
- b. receiving the light projection generated by the object under observation with the image sensor (col. 11, lines 35-39), the magnified picture being produced by the projected image data obtained by the image sensor (col. 11, lines 40-51).

Referring to claim 2, Horiuchi discloses a method for detecting the presence of microorganisms in a sample, comprising the steps of:

- a. preparing a light-permeable culture medium mixed with a sample (col. 9, lines 3-6)
- b. illuminating the medium with a coherent laser beam (col. 11, lines 24-34)
- c. receiving the light projection generated by the medium with an image sensor (col. 11, lines 35-39), the presence of microorganisms being detected by analyzing the projected image data obtained by the image sensor (col. 11, lines 35-51 and col. 12, lines 6-24).

3. Claims 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Cremer et al. (WO98/28592 A1 - Note: This document is in the German language; therefore, the corresponding US patent US 6,424,421 provided herewith, will be utilized as an official English translation, and will be referred to herein as "Cremer" for purposes of the prior art rejection).

Referring to claim 3, Cremer discloses a projection detecting system comprising:

- a. a loading portion for an object under observation (col. 12, lines 31-42)

b. a coherent laser beam emitting source which illuminates the object placed on the loading portion (col. 9, lines 45-53)

c. an image sensor which is an array of light sensitive detectors, arranged to receive the light projection generated by the object illuminated by the laser beam and providing the projected image data corresponding to each detector (col. 16, lines 10-18).

Referring to claim 4, Cremer further discloses:

a. a multiple loading portion capable of accommodating many objects under observation in a row (col. 15, lines 2-6)

b. a coherent laser beam emitting source which illuminates through the object placed on the loading portion (col. 9, lines 45-53)

c. an image sensor which is an array of light sensitive detectors, arranged to receive the compounded light projection generated by the object illuminated by the laser beam and providing the projected image data corresponding to each detector (col. 16, lines 10-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cremer et al.

(WO98/28592 A1 - Note: This document is in the German language; therefore, the

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corresponding US patent US 6,424,421 provided herewith, will be utilized as an official English translation, and will be referred to herein as “Cremer” for purposes of the prior art rejection) as applied to claim 3, further in view of Hirschfeld (U.S. Patent No. 3,819,270).

Referring to claim 5, Cremer discloses two coherent laser beam sources that illuminate the object placed on the loading portion from X and Y directions that are perpendicular to each other, and two image sensors that are an array of light sensitive detectors, arranged to receive the light projection generated by the object illuminated by the laser beams from the X and Y directions and providing the projected image data corresponding to each detector as X and Y image data (col. 10, lines 1-9).

Cremer teaches that it was well known to scan an object in all three directions (X, Y, Z) in order to create a three-dimensional image (col. 2, lines 30-32). However, Cremer fails to teach three coherent laser beam sources and three image sensors.

Hirschfeld discloses three coherent light beam sources which illuminate an object from X, Y, and Z directions which are perpendicular to each other (col. 9, lines 20-25. Note that the “three corresponding light beams along mutually orthogonal paths” in lines 23-24 is interpreted to mean that the beams are in the X, Y, and Z directions that are perpendicular to each other), and three image sensors which are an array of light sensitive detectors, arranged to receive the light projection generated by the object illuminated by the light beams from the X, Y, and Z directions and providing the projected image data corresponding to each detector as X, Y, and Z image data (col. 9, lines 26-38).

Cremer and Hirschfeld are both concerned with projection detection systems. Hirschfeld’s system provides accurate measurements by minimizing orientation effects

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(Hirschfeld, col. 9, lines 11-13). Therefore, it would have been obvious to modify Cremer's system to include three laser beam sources and three image sensors as taught by Hirschfeld.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cremer et al. (WO98/28592 A1 - Note: This document is in the German language; therefore, the corresponding US patent US 6,424,421 provided herewith, will be utilized as an official English translation, and will be referred to herein as "Cremer" for purposes of the prior art rejection).

Referring to claim 6, Cremer discloses a loading portion which holds an object under observation as disclosed above, and is capable of rotating the object around the center axis that passes through the center of the object (col. 12, lines 33-43).

Cremer does not explicitly state that the object is rotated with a constant angular velocity. Cremer teaches that a stepping motor is utilized for rotating the loading portion (col. 12, lines 52-54). Official notice is taken that stepper motors were exceedingly well known in the art and utilized for rotating an object with a constant angular velocity. Therefore, it would have been obvious to utilize the stepping motor of Cremer to rotate the object with a constant angular velocity in order to provide an accurate and complete 3D image series of the object under observation (Cremer, col. 14, lines 15-17).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Jaggi U.S. Patent No. 4,845,552 discloses a projection detection system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Monday thru Thursday 8:30am to 6:00pm and alternating Fridays 9:30am to 6:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

CK

ck

January 9, 2003


Jon Chang
Primary Examiner